

State Geological Survey Division



Illinois Institute of
**Natural
Resources**

PDL

217/344-1481

Natural Resources Building
615 East Peabody Drive
Champaign, IL 61820

REFERENCE #16
SITE NAME *Morrison City Dump*
SITE ID *ILD980616395*

April 13, 1981

Ms. Sallie A. Smith
Residual Management Section
Division of Land/Noise Pollution Control
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, IL 62706

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ILL. E.P.A. - D.L.P.C.
STATE OF ILLINOIS

Dear Ms. Smith:

This letter is in response to your request for a preliminary hydrogeologic evaluation of a proposed solid waste disposal site in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 23, T. 21 N., R. 5 E., Whiteside County, Illinois. It is understood that this site is a proposed expansion of the existing general municipal refuse disposal site. The site was field inspected April 6, 1981. Enclosed are copies of logs of wells from the vicinity of the site on record at the Geological Survey.

The proposed site is quite similar in nature to the existing site, adjacent to it. The surficial material consists of wind-blown silt, 20-30 feet thick overlying clay, silt, peat and sand of glacial origin. These materials lie on bedrock of Silurian dolomite which constitutes the main aquifer in this area. The thick silt deposit may act as an effective barrier to the migration of contaminants, provided a significant thickness of this or finer material is left between the refuse and the bedrock. The silt is moderately impermeable and has a relatively high capacity for the attenuation of leachate.

Sand layers were encountered above the bedrock in several borings, especially B7 and B11. The placement of refuse within these layers which are in direct contact with the bedrock should be avoided, as the sandy material has little capacity to attenuate leachate. In areas where sand lenses are separated from the bedrock by a substantial thickness of impermeable material, as in boring W12, the danger of contamination is greatly lessened.

The local ground-water flow system cannot be precisely determined from the boring data, although the regional flow is to the south, toward the Rock River. There are several houses to the south of the proposed site (we have no record of wells at these houses) which may be affected should leachate migration occur. Significant migration may occur if refuse is allowed in close contact with the dolomite or sand directly overlying the dolomite.

The potential for ground-water contamination in the vicinity of the site appears to be low. The site does not appear to be within the 100-year floodplain.

Very truly yours,

Timothy H. Larson

Timothy H. Larson

Assistant Geologist

Hydrogeology and Geophysics Section

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